

1. SAKLINSKIY, V. V.
2. USSR (600)
4. Automobiles - Apparatus and Supplies
7. Examples of the application of metallo-ceramic automobile and tractor parts.
Avt. trakt. promo. no. 11, 1952
9. Monthly List of Russian Accessions, Library of Congress, March 1953, Unclassified.

SAKLINSKIY, V. V., ENG.

Metals, Powdered

Bimetallic metal-ceramic parts. Vest.mash. 32 No. 3, 1952.

Monthly List of Russian Accessions, Library of Congress, October 1952. Unclassified.

RAKOVSKIY, V.S.; SAKLINSKIY, V.V.; SOKOLOVA, T.P., tekhnicheskiy redaktor:

[Powdered metals in machine building: a reference manual] Metallo-
keramika v mashinostroenii; spravochnoe posobie. Moskva, Gos. nauchno-
tekhn. izd-vo mashinostroit. lit-ry, 1956. 71 p. (MLRA 9:5)
(Powder metallurgy)

SEKLINSKIY, V.V.

Category : USSR/Solid State Physics - Diffusion. Sintering E-6

Abs Jour : Ref Zhur - Fizika, No 3, 1957, No 6691

Author : Seklinskiy, V.V.

Inst : NII Tavtoprom (Scientific Research Institute of Automotive Industry), USSR

Title : Investigation of the Sintering Process of Certain Metal Powders.

Orig Pub : Poroshkovaya metallurgiya, Yaroslavl', 1956, 21-51

Abstract : During the process of sintering of metal powders a contact is formed and made closer between particles of the powders as a result of diffusion processes, caused by the temperature mobility of the atoms. The surface diffusion predominates during the initial stage, while volume diffusion predominates in the final stage. The process of formation of the contact is attributed to forces causing plastic diffusion of the powder particles, and to the action of surface tension that results from liquidation of defects of the crystalline lattice.

Card : 1/1

SARLINSKIY, V. V.

"Gesinterte Bimetall Lager."

paper presented at Intl. Powder Metallurgy Meeting, Eisenach, 28-31 May 1957.

Die Technik, No. 10, Oct 1957.

Saklinskiy, V.

ABRAMOVICH, I.I., prof., ANBINDER, A.G., inzh., ANTOSHIN, Ye.V., inzh.,
 ARKHANGEL'SKIY, L.A., inzh., ASTAF'YEV, S.S., kand. tekhn. nauk,
 AFANAS'YEV, L.A., inzh., BARGSHTEYN, I.I., inzh., BORISOV, Yu. S.,
 inzh., red., BYALYY, I.L., inzh., VETVITSKIY, A.M., inzh., GERSHMAN,
 D.Kh., inzh., GINZBURG, Z.M., inzh., GOROSHKIN, A.K., inzh.,
 YEVDOKIMCHIK, Kh.I., inzh., ZHIKH, V.A., kand. tekhn. nauk,
 ZABYVAYEV, Ye. I., kand. tekhn. nauk, [deceased], ZOBIN, V.S., inzh.,
 IVANOV, G.P., kand. tekhn. nauk, KAPRANOV, P.N., inzh., KONDRATOVICH,
 V.M., inzh., KOSTEREV, S.K., inzh., KOVAL'SKIY, N.N., inzh., KRUGLYAK,
 L.A., inzh., LUKYANOV, T.P., inzh., LAPIDUS, A.S., kand. tekhn. nauk,
 LIVSHITS, G.A., kand. tekhn. nauk, LISHANSKIY, I.M., inzh., MIGALINA,
 Ye.Ya., inzh., NOSKIN, R.A., kand. tekhn. nauk; PRONIKOV, A.S.,
 doktor tekhn. nauk, REGIRER, Z.I., kand. tekhn. nauk, RUDYK, M.A.,
 inzh., SOKOLOVA, N.V., inzh., SAKLINSKIY, V.V., inzh., SAKHAROV, V.P.,
 inzh., TOKAR', M.Kh., inzh., TKACHEVSKIY, G.I., inzh., KHRUNICHEV,
 Yu.A., kand. tekhn. nauk, TSOPIN, K.G., inzh., red.; SHEYNGOL'D, Ye. M.,
 inzh., SOKOLOVA, T.F., tekhn. red.

[Handbook for machinists of machinery plants in two volumes] Spravochnik
 mekhanika mashinostroitel'nogo zavoda v dvukh tomakh. Moskva, Gos.
 nauchno-tekhn. izd-vo mashinostroit. lit-ry. Vol. 2. [The technology
 of repair work] Tekhnologiya remonta. Otv. red. toma IU. S. Borisov,
 1958. 1059 p. (MIRA 11:10)

(Machinery--Maintenance and repair)
 (Machine-shop practice)

ANTOSHIN, Ye.V.

PHASE I BOOK INFORMATION

807/1361

25(5)

p.3

Spravochnik sushchitsya mashinostroitel'nogo zavoda v 4kh tomakh.
T. 2: Tekhnologiya remontov. (Handbook for Mechanics of Machine-building
Plants in Two Volumes. Vol. 2: Technology of Repair Operations) Moscow,
Mashgiz, 1958. 411, 1059 p. 40,000 copies printed.

Redp. Ed.: Yu.S. Borisov, Engineer; Ed.: K.G. Tropin, Engineer; Tech. Ed.:
S.P. Solovov; Ed. of Ser.: Yu.S. Borisov, Engineer, A.P. Vlasovskiy,
Doctor of Technical Sciences, and R.A. Moskin, Candidate of Technical Sciences;
Managing Ed. for Reference Literature (Mashgiz): V.I. Krylov, Engineer.

PURPOSE: This handbook is intended for personnel responsible for repair and main-
tenance operations in a machinery-manufacturing plant.

CONTENTS: The handbook contains information pertinent to the organization of
repair and maintenance operations, design-preparation of maintenance work, and
techniques of maintenance. Information on scientific research organizations and
plants participating in preparation of this volume is included in the coverage
of Volume 1 (807/1359). There are no references. Basic topics covered include
reconditioning and making of parts in maintenance operations; metal-working,
boring, and pipe-fitting; finishing operations involved in maintenance work;
checking parts for precision; basic bench and assembly work; maintenance of
power equipment; and maintenance of foundations.

Parts made of metal powders (Salitskiy, V.I., Engineer)
Basic data 363
Use of parts made of metal powders in maintenance of equipment 365
Bench work 367
Technology of manufacturing parts from metal powders 370

Use and manufacture of nonmetallic parts and products in maintenance
of equipment 372
Parts made from plastic laminated wood (Rudyk, N.A., Engineer) 372
Plastic overlaid ways (Lepidus, A.S., Candidate of Technical Sciences) 385
Packing members, friction discs, and rubberized belts 388
(Polar, M. Kh., Engineer; and Yevitskiy, A.M., Engineer)
Protective rubber coatings (Borisov, Yu. S., Engineer) 404

Ch. II. Metalworking, Boring and Pipe-fitting Operations in
Maintenance of Equipment 408
Bench work and assembly tools (Afonas'ev, L.A., Engineer) 408
Bench work tools 408
Machinist's hammers 408
Chisels and saps chisels 409

Card 10/26

AUTHOR: Yevseyev, A.S., Saklinskiy, V.V. 113-58-7-14/25

TITLE: Powder Metallurgy in the Automobile Industry (Poroshkovaya metallurgiya v avtomobil'noy promyshlennosti)

PERIODICAL: Avtomobil'naya promyshlennost', 1958, Nr 7, pp 29-30 (USSR)

ABSTRACT: In Soviet automobile production powder metallurgy assumes an ever growing industrial importance. From 1954 to 1957, the output of metallo-ceramic parts in automobile plants increased from 2.5 to 115 tons. This figure will increase by several times in 1958 and by 15 times by 1965. The high accuracy and antifriction properties of the metallo-ceramic parts have been used for the bushings of the guiding valves of the booster engines of the "Volga" and "Moskvich" cars and parts of the gearbox of the ZIL-111 and "Volga" cars. The Yaroslavskiy and Gor'kovskiy avtozavody (Yaroslavl' and Gor'kiy Automobile Plants) and several other car plants are already using powder metallurgy in large amounts. The characteristics of various metal powders are given (Table 1), as well as a brief characteristic of the necessary equipment. NIITAvtoprom, in co-operation with other plants, has done very much in introducing powder metallurgy to the automobile industry. Automobile types and the parts produced with powder metallurgy base are indicated

Card 1/2

Powder Metallurgy in the Automobile Industry

113-58-7-14/25

in table 2. There is 1 photo and 2 tables.

ASSOCIATION: NIITAvtoprom (NIITAvtoprom)

1. Powder alloys--Applications 2. Automobiles--Production

Card 2/2

SAKLINSKIY, V.V.

"Powder metallurgy in the USSR automobile industry."

Report presented at the 2nd Intl. Powder Metallurgy Conference
Eisenach, East Germany 1-3 June 1961.

SAKLINSKIY, V.V., inzh.

Technical and economic efficiency of technological processes
in powder metallurgy. Vest. mash. 41 no.6:52-54 Je '61.

(MIRA 14:6)

(Powder metal processes)

SAKLINSKIY, V.V.; BLAGIN, V.I.

Present state and the outlook for the development of powder metallurgy in the automobile industry. Avt. prom. 30 no.6: 29-31 Je '64. (MIRA 17:12)

1. Nauchno-issledovatel'skiy institut tekhnologii avtomobil'noy promyshlennosti i Gor'kovskiy avtomobil'nyy zavod.

SAKLINSKIY, V.V.

Development and use of new materials and processes of the powder metallurgy in the automobile industry. Avt.prom. 31 no.7:33-35
Jl '65. (MIRA 18:8)

1. Nauchno-issledovatel'skiy tekhnologicheskii institut avtomobil'noy promyshlennosti.

S/122/61/000/006/008/011
D244/D301

AUTHOR: Saklinskiy, V.V., Engineer

TITLE: Engineering and economic effectiveness of powder metallurgy

PERIODICAL: Vestnik mashinostroyeniya, no. 6, 1961, 52-54

TEXT: Methods of powder metallurgy are highly economical and effectively supply the increasing demands of the automobile industry for some small components. The following comparison shows the growth of production by these methods:

Year	Годы	1955	1956	1957	1958	1959	1960	Typical applica- tions of powder metallurgy are: ✓
Output in percent	Объем производства в %	5	100	250	560	570	680	

For antifriction components to carry high loads at high speeds with inadequate lubrication; for friction materials to ensure a coefficient of friction of at least 0.1; as porous materials for fuel filters; as substitutes to economize on non-ferrous metals. The production

Card 1/3

Engineering and economic...

S/122/61/000/006/008/011
D244/D301

technology consists of mixing the powders and sintering the mixtures at pressure to form the required component which is then checked for accuracy, sulphided to reduce friction and annealed to improve the structure and machining properties. For friction components only sintered metal ceramic powders give a friction coefficient in oil higher than 0.1. These are used in automobiles 311-111 (ZIL-111) Chayka, Volga etc. The use of sintered components can result in large savings. The Kaluzhskiy zavod avtomotoelektro-oborudovaniya (Kaluga Plant of Automobile Electrical Equipment) replaced alloy bearings of electric motors by bearings in iron metal ceramic to save 3000 rubles per ton. On the average 1 ton of automobile components required 1220 man hours if produced by ordinary methods: but only 1064 man hours by the techniques of powder metallurgy. Due to improvements in technology and the increased volume, the productivity of the industry has greatly increased (Table 2) Further development of the industry is envisaged in the present Seven Year Plan to increase the output by more than 30 times. ✓

(For Table 2 see next card)

Card 2/3

Engineering and economic...

S/122/61/000/006/C08/011
D244/D301

Таблица 2

Показатели	1955 г.	1956 г.	1957 г.	1958 г.	1959 г.
✓Средн. с 1 м ² производственной площади в т	0,044	0,076	0,135	0,34	0,576
✓Выработка на одного производственного рабочего в т	—	1,35	2,38	3,70	3,73

Table 2. 1 - Indices
2 - Output per 1m² of factory area, tons
3 - Productivity of one worker, tons ✓

There are 2 tables.

Card 3/3

SAKLO, G.O.

Silicate glue for pasting microscopic preparations. Bot. zhur.
[Ukr.] 12 no.2:90-91 '55. (MLRA 8:10)

1. Glukhivs'kiy pedagogichniy institut
(Glue) (Biological specimens)

SAKLOWSKI, M., mgr., inz.

Activities of the London conference of the Technical Committee
ISO.Tc 38 - Textile fabrics. Normalizacja P 28 no.10:485-487 0
'60.

GORYAYEV, M.I.; PUGACHEV, M.G.; TRET'YAKOV, L.I.; POPOV, A.P.; KORNILOVA,
G.P.; IBRAYEV, G.Zh.; TUREBEKOV, Sh.S.; SAKMAN, N.E.

Preparation of fodder yeasts from molasses waste of the Dzhambul
Alcohol and Vodka Combine. Izv. AN Kazakh. SSR.Ser.khim.nauk 15
no.2:77-82 Ap-Je '65. (MIRA 18:9)

AKSENT'YEV, I.A.; KUF'INA, A.I., red.; SAKMAROV, A.A., red.

[Problems in the theory of functions of complex variables
and operational calculus] Sbornik zadach po teorii funktsii
kompleksnogo peremennogo i operatsionnomu ischisleniiu.
Kazan', Izd-vo Kazanskogo univ., 1961. 49 p.

(MIRA 18:7)

SAKYNIN, A. V.

USSR/Pharmacology and Toxicology - Toxicology

V-9

Abs Jour : Ref Zhur - Biol., No 21, 1953, 98626

Author : Litkens, V.A., Sakynin, A.V.

Inst : -

Title : On Hygienic Evaluation of the General Toxic Action of Sulfur Dioxide.

Orig Pub : V sb.: Vopr. gigiyeny truda, professional'noy patologii i toksikologii v prom-sti Sverd1, obl. Sverdlovsk, 1955, 160-172.

Abstract : Experiments were conducted on hypophysectomized and intact frogs. After hypophysectomy, the frogs were sluggish, with sharply decreased motor functions and lowered reaction to external stimuli. Hexonal was introduced subcutaneously in a dosage of 4-40 γ /kg and chloral hydrate 40-400 γ /kg. Duration and depth of narcosis in hypophysectomized frogs is greater than in intact frogs.

Card 1/2

ENGLIN, B.A.; TUGOLUKOV, V.M.; ~~SAKODYNSKAYA, T.P.~~

Relationship of the dissolved water content of hydrocarbon
fuels to relative humidity at different temperatures. ~~him.~~
i tekhn. topl. no. 11: 43-46 N '56. (MLRA 9:11)

1. Nauchno-issledovatel'skiy institut goryuche-smazochnykh
materialov.
(Hydracarbons) (Fuel) (Humidity)

SABLINA, Z.A.; FOMINA, A.M.; CHURSHUKOV, Ye.S.; SAKODYNSKAYA, T.P.

Evaluation of the performance of sulfur-containing diesel
fuels and their components by means of rapid laboratory
methods. Khim. i tekhn. topl. i masel 8 no.5:57-61 My '63.
(MIRA 16:8)

L 24490-66 EWT(m)/EWP(j)/T/ETC(m)-6 IJP(c) RM/WW
 ACC NR: AP6006986 (A) SOURCE CODE: UR/0190/66/008/002/0343/0346

AUTHORS: Bebikh, G. F.; Sakodinskaya, T. P.

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Phosphorylation of polymers

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 2, 1966, 343-346

TOPIC TAGS: copolymer, phosphorylation, phosphorus compound

ABSTRACT: Phosphorylation of styrene-divinylbenzene copolymer (I) of polypropylene (II) and polyacrylonitrile (III) with phosphorus pentasulfide (IV) has been investigated. This work represents a further development in the study of IV as a new phosphorylating agent (see G. F. Bebikh, V. K. Kuskov, V. M. Shatskiy, and G. L. Podlovchenko, Vysokomolek. soyed. 4, 1677, 1962). Although phosphorylation of I with IV at 132C at atmospheric pressure yielded a polymer containing 4.40% of P and at 200C in an autoclave--8.02% of P, 6.10% S, neither II nor III gave satisfactory results when treated with IV. The amount of P incorporated into the polymeric structure was below the amount obtained with PCl_3 . Thermomechanical properties of

Card 1/2

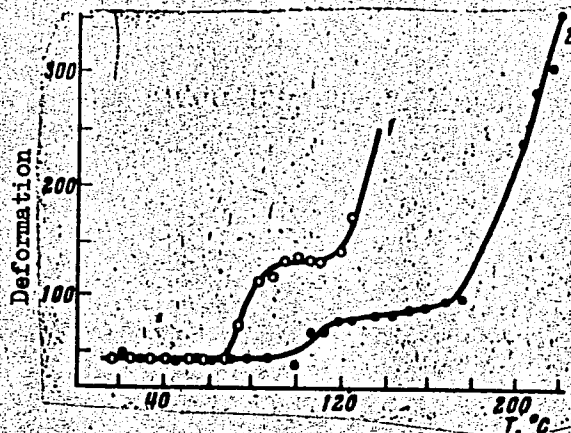
UDC: 678.01:54

L. 24490-66

ACC NR: AP6006986

the product of I and IV are illustrated in Fig. 1.

Fig. 1. Thermomechanical curves of the styrene-divinylbenzene copolymer: 1 - untreated, 2 - phosphorylated.



This material has static exchange capacity $SEC_{NaOH} = 4.8$ mg equiv/g. Orig. art. has: 1 table, 1 figure, and 1 equation.

SUB CODE: 07, 11/ SUBM DATE: 23Mar65/ ORIG REF: 003/ OTH REF: 002

Card 2/2 *RB*

ACCESSION NR: AP4004702

S/0065/63/000/012/0050/0055

AUTHOR: Englin, B. A.; Rozhkov, I. V.; Tugolukov, V. M.; Sakody*nskaya, T. P.

TITLE: Prevention of ice crystal formation in aviation fuels

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 12, 1963, 50-55

TOPIC TAGS: aviation fuel, ice formation, ethylcellosolve, fuel additive, antifreeze

ABSTRACT: A study has been made of the effectiveness of cellosolve (GOST 8313-60) as an antifreeze additive for T-1 and TS-1 jet fuels and B-95/130 aviation gasoline. Previous tests showed that of 100 compounds tested, cellosolve is the most effective. In studying the formation of ice in the fuels in the presence of cellosolve, the following conditions were varied: temperature (down to -60C), moisture content (0—0.13%), cellosolve content (0—0.3%), ambient relative humidity, and storage time in the laboratory, in ground storage, and in flight. Under all the conditions studied, the addition of 0.3% cellosolve completely prevented the formation of ice in the fuels. The

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ACCESSION NR: AP4004702

presence of cellosolve in the fuels had no negative effect on either the physicochemical properties or the performance characteristics of the fuels. Moisture absorption in storage at 30—100% relative humidity was studied in a 1-yr test with T-1, TS-1, and B-95/130 fuel samples without cellosolve or containing 0.3% cellosolve. The moisture content of the latter remained nearly the same as that of controls throughout the year. Orig. art. has: 4 tables and 2 figures.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 03Jan64

ENCL: 00

SUB CODE: FL

NO REF SOV: 007

OTHER: 007

Card 2/2

SAKODYNSKIY, I. I.

"Preparative Columns"

Report to be submitted for the Second International Symposium on Advances
in Gas Chromatography, Houston, Texas, 23-26 March 1964.

SOV/156-58-3-51/52

AUTHORS: Sakodynskiy, K. I., Babkov, S. I., Zhavoronkov, N. M.

TITLE: Two-Temperature Method for the Separation of Binary Mixtures
(Dvukhtemperaturnyy metod razdeleniya binarnykh smesey)

PERIODICAL: ~~Nauchnyye~~ doklady vysshey shkoly, Khimiya i khimicheskaya
tekhnologiya, 1958, Nr 3, pp. 598-602 (USSR)

ABSTRACT: In the present paper the most important rules governing the
two-temperature method for the separation of binary mixtures
are explained. The two-temperature method may be used success-
fully for the isotopic separation and for the absorption-
desorption separation of gases. The conditions for carrying-
out effective separations by means of the two-temperature method
are given. The degree of elution φ in the two-temperature
method is dependent on the temperature difference. An equa-
tion was formulated for the approximate determination of
the number of theoretical stages necessary to obtain the se-
paration desired. It was found that two separation columns
are connected with each other by the two-temperature method
and that they reach the same separation effect as can be

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SOV/156-58-3-51/52

Two-Temperature Method for the Separation of Binary Mixtures

reached using a rectifying column with n number stages and the separation coefficient $\sqrt{\alpha_1/\alpha_2}$.

There are 2 figures and 5 references, 3 of which are Soviet.

ASSOCIATION: ~~no mention~~ **Kafedra** tekhnologii svyazannogo azota i shchelochey Moskovskogo khimiko-tekhnologicheskogo instituta im. D. I. Mendeleyeva
(Chair for the Technology of Bound Nitrogen and Alkalies at the Moscow Chemical and Technological Institute imeni D. I. Mendeleyev)

SUBMITTED: October 28, 1957

Card 2/2

5(4)

SOV/20-121-4-30/54

AUTHORS: ~~Sakodinskiy, K. I.,~~ Babkov, S. I., Zhavoronkov, N. M.,
Corresponding Member, Academy of Sciences, USSR

TITLE: The Coefficients of the Equilibrium Distribution of Deuterium
in the Isotope Exchange Between Water and Some Thiols (Ko-
effitsiyenty ravnovesnogo raspredeleniya deyteriya pri izo-
topnom obmene mezhdu vodoy i nekotorymi tiolami)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 121, Nr 4, pp 681-684
(USSR)

ABSTRACT: It was interesting experimentally to determine the coefficients
mentioned in the title. This paper investigates the equi-
librium of the reactions of deuterium exchange between water
and normal butyl thiol $n\text{-C}_4\text{H}_9\text{SH}$, secondary butyl thiol
 $\text{sec-C}_4\text{H}_9\text{SH}$, isoamyl thiol $i\text{C}_5\text{H}_{11}\text{SH}$, normal hexylthiol
 $n\text{-C}_6\text{H}_{13}\text{SH}$, and thiophenol $\text{C}_6\text{H}_5\text{SH}$. The experimental determina-
tion and the calculation of the coefficients α of the equi-
librium distribution of deuterium are discussed. The iso-
tope equilibrium in the exchange between water and the thiols
is obtained after 8 - 10 hours at a temperature of 20°

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SOV/20-121-4-30/54

The Coefficients of the Equilibrium Distribution of Deuterium in the Isotope Exchange Between Water and Some Thiols

(after 2 hours after the exchange with thiophenol) and after 2 - 4 hours at 80°. In addition to the experiments concerning the direct exchange (between water enriched by deuterium and thiol of a natural deuterium concentration), for each of the investigated types of thiol one experiment concerning the inverse exchange at 20° was carried out. The results of the experimental determination of the coefficient α of the equilibrium distribution (for various temperatures) are given in a table. The corresponding errors are then discussed. Under the discussed conditions of the isotope exchange, only the hydrogen isotopes of the group S-H participate in the reaction. The temperature dependence of α is shown in a diagram and the corresponding analytic expressions $\lg(\alpha) = f(T)$ for the various thiols are explicitly given. However, the results of this paper and also previous results are not sufficient for the finding of a direct connection between the quantity α and the composition (and the structure) of the radical group. It is only evident, that the influence of the structure and of the composition of the radical group on the value of α is

Card 2/3

SOV/20-121-4-30/54

The Coefficients of the Equilibrium Distribution of Deuterium in the Isotope Exchange Between Water and Some Thiols

weak. There are 1 figure, 1 table, and 10 references, 5 of which are Soviet.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova
(Physical-Chemical Institute imeni L. Ya. Karpov)

SUBMITTED: May 13, 1958

Card 3/3

5(4)

SOV/156-59-2-9/48

AUTHORS: Sakodyskiy, K. I., Zhavoronkov, N. M.

TITLE: The Rate of Hydrogen Exchange Between Water and Isoamyl Thiol in an Inert Solvent (Skorost' vodorodnogo obmena mezhdu vodoy i izoamiltiolom v srede inertnogo restvoritelya)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Khimiya i khimicheskaya tekhnologiya, 1959, Nr 2, pp 256-259 (USSR)

ABSTRACT: Scarce publication data on the hydrogen exchange between the S-H- and O-H-groups (Refs 1-11) are mentioned. As the two components mentioned in the title are not soluble in one another, the rate of isotopic exchange depends to a considerable extent on the conditions of mixing of the two components (Fig 1). Therefore, the reaction in solution was investigated in an inactive medium, i.e. acetone. Though acetone enters an exchange reaction with water, this reaction is so slow (Ref 14) in the neutral medium that it was possible to neglect it for the short periods of experimenting. The degree of exchange was calculated according to the following formula:

$$F = \left(1 - \frac{x_0 - x_\tau}{x_0 - x_\infty} \right) 100\% \quad (x = \text{initial})$$

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SOV/156-59-2-9/48

The Rate of Hydrogen Exchange Between Water and Isoamyl Thiol in an Inert Solvent

concentration of deuterium in water, x_t = concentration of D according to the time t , x_∞ = concentration of D after the state of equilibrium has been attained). A table gives the experimental results. They indicate that the exchange reaction proceeds in the inert solvent with high velocity and is finished after 0.5 min, and that the isotopic exchange does not cause side reactions. Figure 2 shows the difference of the reaction rate in the case of the mixing of the components and of solving them in an inert solvent. There are 2 figures, 1 table, and 16 references, 9 of which are Soviet.

PRESENTED BY: Kafedra tekhnologii svyazannogo azota i shchelochey Moskovskogo khimiko-tekhnologicheskogo instituta im. D. I. Mendeleyeva (Chair of the Technology of Bound Nitrogen and Alkalies of the Moscow Institute of Chemical Technology imeni D. I. Mendeleyev)

SUBMITTED: December 31, 1958

Card 2/2

21(5)

SOV/64-59-3-9/24

AUTHORS: Zhavoronkov, N. M., Sakodyskiy, K. I.

TITLE: Industrial Methods for the Production of Heavy Water (Promyshlennyye metody polucheniya tyazheloy vody)

PERIODICAL: Khimicheskaya promyshlennost', 1959, Nr 3, pp 35 - 48 (USSR)

ABSTRACT: A detailed survey is given on industrial methods of producing heavy water, stating data on the technological methods of the whole world, which are projected or have been carried out, or which are being carried out or have been dropped already. The various methods of developing and separating deuterium are theoretically dealt with, as well as the electrolysis, the chemical exchange of isotopes and the rectification of water and hydrogen, the corresponding data are given (Tables 1,2 (printing error)). Among the various factories in the western countries established for the production of heavy water, those works are mentioned which work according to the electrolytic method, the rectification of water and the distillation of hydrogen, and according to the double-temperature method, the corresponding figures are given, representations in diagrams and industrial and commercial data are shown. As far as the

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Industrial Methods for the Production of Heavy Water

SOV/64-59-3-9/24

method of hydrogen distillation is regarded, it was mentioned that this was the first method to be introduced in USSR industry, deuterium was extracted from electrolytic hydrogen according to the low-temperature rectification (Ref 37). The latter production is the only example given for the production of heavy water in a country other than western and is described in detail (Fig 4, scheme). A table is also given (Table 3) with data on works and firms in western countries which deal or dealt with the production of heavy water. Finally comparisons are made between the various methods of producing heavy water, and the corresponding data are given of some works in the western countries (Tables 4,5). There are 12 figures, 5 tables, and 96 references, 6 of which are Soviet.

Card 2/2

SZAKODUNSZKIJ, K.I. [Sakodynskiy, K.I.]

Industrial production of heavy water. Atom taj 2 no.4:73-84 '59.

5(3)

SOV/63-4-1-23/31

AUTHORS: Sakodynskiy, K.I., Babkov, S.I.

TITLE: Mutual Solubility of Water and Some Thiols (Vzaimnaya rastvorimost' vody i nekotorykh tiolov)

PERIODICAL: Khimicheskaya nauka i promyshlennost', 1959, Vol 4, Nr 1, p 133 (USSR)

ABSTRACT: The solubility of the following thiols in water and the solubility of water in them has been investigated: normal butylthiol, secondary butylthiol, isoamylthiol, normal hexylthiol and thiophenol. The solubility of the thiols in water is inversely proportional to the molecular weight. At an increase of temperature the solubility of n-butylthiol and thiophenol rises, but that of isoamylthiol decreases. The solubility of water in the thiols increases with temperature.

Card 1/2

Mutual Solubility of Water and Some Thiols

SOV/63-4-1-23/31

ASSOCIATION: Fiziko-khimicheskiy institut imeni L.Ya. Karpova (Physical-Chemical Institute imeni L.Ya. Karpov)

SUBMITTED: July 16, 1958

Card 2/2

ZHAVORONKOV, N.M.; BABIKOV, S.I.; ORLOV, V.Yu., kand.khimicheskikh nauk;
SAKODYNSKIY, K.I., kand.khimicheskikh nauk; SEVRYUGOVA, N.N.;
SOKOL'SKIY, V.A.; CHERNYKH, G.N.

Production and uses of stable isotopes. Khim.nauka i prom. 4
no.4:487-498 '59. (MIRA 13:8)
(Isotope separation)
(Isotopes--Industrial applications)

21(1)

AUTHOR:

Sakodyskiy, K. I.

SOV/89-6-1-2/33

TITLE:

Industrial Production of Heavy Water (Promyshlennoye
proizvodstvo tyazheloy vody)

PERIODICAL:

Atomnaya energiya, 1959, Vol 6, Nr 1, pp 14 - 20 (USSR)

ABSTRACT:

This is an abstract from 80 articles by Western authors
dealing with the following subjects concerning heavy water:

1. Probable heavy water consumption in various countries
(Great Britain, France, India, Australia, Italy,
Switzerland, Sweden, Norway, and Western Germany).
2. The manufacturing plants at present existing in various
countries are described in short.
3. The plans for the extension of various manufacturing
plants in various countries are mentioned.

There are 2 figures, 1 table, and 80 references, 3 of which
are Soviet.

Card 1/2

Industrial Production of Heavy Water

SOV/89-6-1-2/33

SUBMITTED: May 4, 1958

Card 2/2

0.0000

77230
SOV/89- 8 -1-24/29

AUTHOR: Zhavoronkov, N. M., and Sakodinsky, K. I.

TITLE: Scientific and Technical News. At the Institute of Physical Methods of Separation (German Democratic Republic)

PERIODICAL: Atomnaya energiya, 1960, Nr 1, pp 81-82 (USSR)

ABSTRACT: In September of 1959, through an invitation by the German Academy of Sciences in Berlin, the authors of this article visited the Institute of Physical Methods (headed by J. Muhlenfordt) in the city of Leipzig. It is the center, in the German Democratic Republic, of experimental work on the stable isotopes. The Institute was organized in 1955. Its basic requirement is the expansion of research and cooperation on the use of stable isotopes among the scientific and other related organizations. The Institute does a great deal of work on the application of the stable isotopes to chemistry, biology, medicine, geology, etc.; it also develops the methods of working with the stable isotopes and works on the theory of separation

Card 1/2

Scientific and Technical News. At the
Institute of Physical Methods of
Separation (German Democratic Republic)

77230
SOV/89-8 -1-24/29

processes. There are six departments in the Institute:
(1) the experimental separation through rectification,
headed by E. Kröll; (2) the experimental separation through
the chemical exchange, headed by K. Wetzel; (3) the theory
of separation methods, headed by G. Fogt; (4) the theoretic-
cal, headed by G. Voigt; (5) the analytic, headed by G.
Birkenfeld; and (6) the application of stable isotopes,
headed by H. Hübner. All the above departments are
involved in production of stable isotope concentrates
of hydrogen, boron, carbon, nitrogen, and oxygen. Con-
struction is scheduled of the new powerful units for
an expanded production of stable isotopes and the con-
centrates B^{10} by a method of the exchange distillation
between BF_3 and its groupings with anisole. Besides
fulfilling its own requirements, the Institute performs
the isotope analysis for all related organizations in the
German Democratic Republic.

Card 2/2

S/074/60/029/009/002/002
B013/B064

AUTHORS: Sakodynskiy, K. I., Zhavoronkov, N. M.

TITLE: Two-temperature Methods of Producing Heavy Water 19

PERIODICAL: Uspekhi khimii, 1960, Vol. 29, No. 9, pp. 1112-1135

TEXT: The present survey deals with methods of producing heavy water, the main laws of two-temperature methods, and the systems of the substances used. Methods of producing heavy water are given in a number of surveys (Refs. 12-32) and in a monograph (Ref. 33). In principle, all methods of isotope separation are suited for the concentration of heavy water. The following methods have found industrial application: electrolysis of water combined with the isotopic exchange between water and hydrogen, rectification of water, low-temperature rectification of hydrogen, and two-temperature exchange between water and hydrogen sulfide. The two last-mentioned methods have gained ever-increasing importance during the past ten years (Ref. 34). The principal methods given are usually combined with one another according to the operating conditions. All production processes of D_2O can be divided into independent methods, and into methods depending

Card 1/3

Two-temperature Methods of Producing Heavy
Water

S/074/60/029/009/002/002
B013/B064

on the production of other substances. The distillation of water and the two-temperature exchange between water and hydrogen sulfide belong to the former. The others comprise all the other methods whose capacity is limited by the amount of hydrogen production for works of ammonia synthesis. Table 1 gives some main indices of the different methods of synthesis. The table indicates that the two-temperature exchange and the low-temperature rectification of water are the most favorable methods from the economic point of view. These two methods are applied in several countries on an industrial scale (Refs. 11, 43-47). A list of the plants in operation and of the biggest projects of heavy-water production is published in Ref. 30. Refs. 34, 48, 49 give data on the production of heavy water in several countries. The main laws of the two-temperature method are described (Figs. 1-7 and Refs. 12, 19-25, 30, 31, 35, 50-62). This method can be applied in two ways: 1) by cascade-like arrangement of individual pairs of multi-stage apparatus; one of the apparatus operates at a low, the other at a high temperature (Fig. 1); 2) by linking two multi-stage columns one of which operates at a high, the other at a low temperature (Fig. 2). Requirements to be met in selecting the system of substances are given. Table 2 gives a comparison of some systems of substances. It

Card 2/3

Two-temperature Methods of Producing Heavy
Water

S/074/60/029/009/002/002
B013/B064

shows that the highest deuterium yield is obtained when applying the systems water - hydrogen, water - hydrogen halide, or ammonia - hydrogen. The following systems are described: water - hydrogen: Tables 3, 4, Figs. 8, 9 (Refs. 12, 15, 19, 24, 36, 45, 57, 66-76); ammonia - hydrogen: Table 5, Figs. 10-12 (Refs. 33, 77-84); water - hydrogen sulfide: Tables 6, 7, Figs. 13, 14 (Refs. 12, 15, 19, 35, 40, 45, 48, 51, 57, 73, 79, 85-127); other systems: Tables 8-10, Fig. 15 (Refs. 9, 18, 35, 62-64, 128-132). I. V. Kurchatov, A. M. Rozen, Ya. M. Varshavskiy, and S. E. Vaysberg are mentioned. There are 15 figures, 10 tables, and 132 references: 16 Soviet.

ASSOCIATION: Fiziko-khimicheskii institut im. L. Ya. Karpova
(Physicochemical Institute imeni L. Ya. Karpov)

Card 3/3

POTAPOV, S.P.; SAKODYNSKIY, K.I.; BORISOVSKAYA, M.A., red.; VLASOVA, N.A.,
tekhn. red.

[Stable isotopes around us] Stabil'nye izotopy vokrug nas. Moskva,
Gos. izd-vo lit-ry v oblasti atomnoi nauki i tekhn., 1961. 67 p.
(MIRA 14:8)

(Isotopes)

MALAFEYEV, N.A.; MALYUSOV, V.A.; UMNIK, N.N.; SAKODYNSKIY, K.I.; ZHAVORNOKOV,
N.M. Prinimali uchastiye: PODGORNAYA, I.V.; ABRAMOVA, V.P.; BARANOVA, V.I.

Determination of the fractionation factors of binary mixtures
tetrachloroalkanes during vaporization in a high vacuum. Khim.prom.
no.3:196-198 Mr '61. (MIRA 14:3)
(Paraffins) (Distillation, Fractional)

YERMAKOV, V.I.; SAKODYNSKIY, K.I.

Use of high-frequency analysis in the study of absorption kinetics.
Khim.prom. no.12:868-870 D '61. (MIRA 15:1)
(Absorption)

S/081/62/000/017/052/102
B158/B186

AUTHORS: Zavoronkov, N. M., Sakodyskiy, K. I.

TITLE: Industrial manufacture of heavy water

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 17, 1962, 353, abstract
17K8 (Kernenergie, v. 4, no. 12, 1961, 893-904 [Ger.])

TEXT: A review is presented. Methods of producing heavy water and information on plants and units for heavy water production constructed, in course of construction, and planned are given. Data are presented on the dynamics of variation in the productive capacity for heavy water, and data on the costs of producing heavy water by various methods are compared. 63 references. [Abstracter's note: Complete translation.]

✓

Card 1/1

SAKODYNSKIY, K.I.; KHOKHLOVA, L.A.

Effect of the medium on the rate of deuterium exchange between water and isoamylthiol. Zhur. VkhO 6 no.6:705-706 '61. (MIRA 14:12)

1. Fiziko-khimicheskiy institut imeni L.Ya.Karpova.
(Water) (Thiols) (Deuterium)

SAKODYNSKIY, K.I.; UMNIK, N.N.

Analysis of binary mixtures of tetrachloroalkanes. Zhur.anal.
khim. 16 no.3:375-376 My-Je '61. (MIRA 14:6)

1. L. Ya. Karpov Scientific Research Physico-Chemical Institute,
Moscow.

(Paraffins)

KISELEV, A.V.; SAKODYNSKIY, K.I.; SHCHERBAKOVA, K.D.

Fourth International Symposium on Gas Chromatography in Hamburg.
Neftekhimiia 2 no.5:804-814 S-O '62. (MIRA 16:1)
(Hamburg--Gas chromatography--Congresses)

SAKODYNSKIY, K.I.; BABKOV, S.I.; ZHAVORONKOV, N.M. (Moscow)

Isotopic hydrogen exchange between water and thiols. Zhur.fiz.khim.
36 no.10:2169-2175 0 '62. (MIRA 17:4)

1. Fiziko-khimicheskiy institut imeni Karpova, Moskva.

RAKOVSKIY, V.S.; SAKLINSKIY, V.V.; FILIMONOV, V.G., inzh., retsenzent;
MARTENS, S.L., inzh., red.; GORDEYEVA, L.P., tekhn. red.

[Powder metallurgy in the machinery industry] Poroshkovaya
metallurgiya v mashinostroenii; spravochnik. 2 izd., ispr.
i dop. Moskva, Mashgiz, 1963. 101 p. (MIRA 16:8)
(Powder metallurgy—Handbooks, manuals, etc.)

KAZAKEVICH, V.Ye.; BRAZHNIKOV, V.V.; VOLKOV, S.A.; SAKODYNSKIY, K.I.

Automatic sampling in preparative chromatography. Khim.i tekhn.
topl.i masel 8 no.11:49-52 N '63. (MIRA 16:12)

1. Fiziko-khimicheskiy institut im. L.Ya.Karpova.

BRAZ, G.I.; MYASNIKOVA, G.V.; YAKUBOVICH, A.Ya.; BAZOV, V.P.;
SAKODYNSKIY, K.I.

Simultaneous trimerization of acetonitrile and trichloroacetonitrile.
Zhur.ob.khim. 33 no.6:1939-1941 Je '63. (MIRA 16:7)

1. Fiziko-khimicheskiy institut imeni L.Ya.Karpova.
(Acetonitrile) (Polymerization)

BEREZKIN, V.G., kand.khim.nauk; SAKODYNSKIY, K.I., kand.khim.nauk

Fourth Symposium on Gaseous Chromatography. Vest. AN SSSR 33
no.9:76-77 S '63. (MIRA 16:9)
(Chromatographic analysis)

SAKODYNSKIY, K.I.; ZHAVORONKOV, N.M.

Basic trends in the development of the methods of separation of
stable isotopes. Zhur. prikl. khim. 36 no.12:2564-2579 D'63.
(MIRA 17:2)

1. Fiziko-khimicheskiy institut imeni Karpova.

CHMITOV, K.V., S. NODYNKO, K.I., red.

[Molecular chromatography] Molekuliarnaya khromatografiya.
Moskva, Nauka, 1964. 161 p. (MIRA 17:11)

1. Chlen-korrespondent AN SSSR (for Chmitov).

ACCESSION NR: AP4042268

S/0089/64/017/001/0070/0071

AUTHOR: Volkov, S. A.; Sakody*nskiy, K. I.

TITLE: Gas chromatographic separation of labeled compounds

SOURCE: Atomnaya energiya, v. 17, no. 1, 1964, 70-71

TOPIC TAGS: gas chromatograph, column chromatograph, preparative chromatography, chromatographic separation, labeled compound separation, deuterated methylethoxysilane separation, siloxane rubber preparation

ABSTRACT: A preparative gas chromatographic technique, heretofore virtually unused for the separation of labeled compounds, has been applied to the separation of deuterium-labeled trimethylethoxysilane(I) and dimethyldiethoxysilane(II) out of the mixture produced in the reaction of tetraethoxysilane with deuterium bromide. I and II are used in the preparation of deuterated siloxane rubber. A detailed description is given of a semiautomatic column chromatograph which permits manual introduction of samples and automatic trapping of separated fractions. The operating procedure of the chromatograph

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ACCESSION NR: AP4042268

is also described. Several grams of I and II were separated in a total of 8 runs at a column temperature of about 100C. At that temperature it is thought possible to separate compounds with boiling points up to 160—170C, i.e., even higher boiling labeled compounds than I and II. Orig. art. has: 2 figures.

ASSOCIATION: none

SUBMITTED: 27Apr63

ATD PRESS: 3069

ENCL: 00

SUB CODE: GC

NO REF SOV: 000

OTHER: 001

Card 2/2

FILIPPOV, G.G.; SARODYNSKIY, K.I.; ZEL'VENSKIY, Ya.D.

Use of the effective concentration method for calculating the
dual temperature separation of isotopes. Khim. prom. 41 no.1:
10-14 Ja '65. (MIRA 18:3)

SAKON TIKOV, N.I.

PHASE I BOOK EXPLOITATION

SOV/4325

USSR. Gosudarstvennyy komitet po radioveshchaniyu i televideniyu

Radio i televideniye v SSSR (Radio and Television in the USSR) Moscow, 1960.
164 p. 4,000 copies printed.

Editorial Board: S.V. Kaftanov, N.P. Kartsov, N.I. Sakontikov, M.S. Gleyzer, and
P.S. Mozharovskiy; Tech. Ed.: Ya. Dubson.

PURPOSE: This book is intended for the general reader.

COVERAGE: The book gives a description of the main features of Soviet radio and television. Information is given on radio and television programs transmitted from central and local stations in the USSR, on radio and television publications, on the volume of broadcasting, and on broadcasts to non-Soviet listeners. The activity of the Vsesoyuznyy nauchno-issledovatel'skiy institut zvukozapisi (All-Union Scientific Research Institute of Sound Recording) and of the Gosudarstvennyy dom radioveshchaniya i zvukozapisi (State House of Broadcasting and Sound Recording) is described. No personalities are mentioned. There are no references.

Card-1/9

Radio and Television in the USSR

SOV/4325

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SAKONTIKOV, N.

Notes on Japanese television technology. Tekh.kino i
telev. 4 no.8:93-95 Ag '60. (MIRA 13:8)
(Japan--Television)

SAKONTSEV, S.; ZELENSKAYA, M., zasluzhennyy vrach RSFSR.

Carrying out the will of the group. Okhr. truda i sots. strakh. 3
no. 3:34-37 Mr '60. (MIRA 13:7)

1. Predsedatel' zavkoma Nizhne-Tagil'skogo metallurgicheskogo
kombinata (for Sakontsev). 2. Nachal'nik medsanchasti Nizhne-
Tagil'skogo metallurgicheskogo kombinata (for Zelenskaya).
(Nizhniy Tagil--Steel industry--Hygienic aspects)

SAKOV, A. D.

"Over-all Station and Individual Unit Control Stations." p. 116

in book - New Developments in the Design of Electric Equipment for Hydro-electric Power Plants, 1957. 222 p. Moscow-Leningrad, Gosenergoizdat.
(Data on the Conference on Design and Operation, Moscow, 16-24 May 1956.)

KAKUYEVITSKI, L.I.; KRUPITSKIY, A.Yu.; SAKOV, A.D.; KHEYFITS, M.E.,
inzh., red.; NIKOLAYEVA, M.I.; red.; BORUNOV, N.I., tekhn. red.

[Manual on relays used in electric protection and automatic
control systems] Spravochnik rele zashchity i avtomatiki. Pod
red. M.E.Kheifitsa. Moskva, Gosenergoizdat, 1962. 190 p.
(MIRA 15:7)

(Electric relays--Handbooks, manuals, etc.)

SAKOV, A.D., inzh.; UMANSKIY, B.Z., inzh.; FEDOTOV, N.I., inzh.

The Bratsk Hydroelectric Power Station. Elek. sta. 34
no.1:7-13 Ja '63. (MIRA 16:2)
(Bratsk Hydroelectric Power Station)

OSTROVITYANOV, K.V., akademik; GATOVSKIY, L.M.; KUZ'MINOV, I.I.,
doktor ekon. nauk; Prinsayali uchastiye: STAROVSKIY, V.N.;
SAKOV, M.P.; BACHURIN, A.V.; ZASLAVSKAYA, T.I.; BOGOMOLOV,
O.T.; RYMALOV, V.V.; RABINOVICH, M., red.; MUKHIN, Yu.,
tekhn. red.

[Economics; textbook] Politicheskaya ekonomiya; uchebnik.
4., perer. i dop. izd. Moskva, Gospolitizdat, 1962. 702 p.
(MIRA 15:11)

1. Akademiya nauk SSSR. Institut ekonomiki. 2. Chlen-
korrespondent Akademii nauk SSSR (for Gatovskiy, Starovskiy).
(Economics)

DOVEBA, A.; SAKOV, V.

Improve the efficiency of wages for the workers in the peat
industry. Sots. trud 8 no.2:65-67 F '63. (MIRA 16:2)
(Wages--Peatmen)

1
SAKOVA, A.A., starshiy bibliograf; ZHARKOV, G.F., kand. fiziko-matematicheskikh nauk

Bibliographic index of works of collaborators of the Theoretical Division of the P. N. Lebedev Physical Institute of the Academy of Sciences of the U.S.S.R. for 1934-1960. Trudy fiz. inst. 16: 140-166 '61. (MIRA 15:2)

1. Biblioteka Fizicheskogo instituta imeni Lebedeva AN SSSR (for Sakova).

(Physics--Bibliography)

SAKOVA, A.A.; SHOTOV, A.P., kand.fiziko-matem.nauk

Bibliographic index of papers by workers of the Semiconductor
Physics Laboratory (FIAN), 1932-1961. Trudy Fiz. inst. 20:172-
190 '63. (MIRA 16:9)

1. Starshiy bibliograf biblioteki Fizicheskogo instituta imeni
Lebedeva AN SSSR (for Sakova).

SAKOVA, F.S.; BUKIN, T.V.

Organizational and prophylactic work in the control of
diphtheria at the Second Pediatric Therapeutic-Prophylactic
Union in Alma-Ata for 1960 and 1961. Zdrav.Kazakh. 22 no.6:
61-63 '62. (MIRA 15:11)

(DIPHTHERIA—PREVENTION)

L 13017-65 EWT(m)/EWP(w)/EPF(n)-2/EWA(d)/EWP(t)/EWP(b) Pu-4/Pad ASD(f)-2/
AS(mp)-2/AEDG(a)/AFWL/SSD/ASD(m)-3/ASD(a)-5/ESD(t) JW/JD/HW/JG/MLK

ACCESSION NR: AT4046834 S/0000/64/000/000/0150/0154

AUTHOR: Popov, L. Ye.; Sukhovarov, V. F.; Panova, L. M.; Sakova, M. P.

TITLE: Effect of atomic defect relaxation on diffusion transformation in Ni-Mo alloys

SOURCE: AN SSSR. Nauchnyy sovet po probleme zharoprochnykh splavov. Issledovaniya stalei i splavov (Studies on steels and alloys). Moscow, Izd-vo Nauka, 1964, 150-154

TOPIC TAGS: diffusion, nickel, molybdenum, nickel molybdenum alloy, activation energy, migration energy, diffusion transformation, atomic defect, atomic defect relaxation

ABSTRACT: During stepwise tempering or heating at a constant rate, cold-worked nickel reveals two stages of atomic defect relaxation at temperatures higher than room temperature, evidenced by the recovery of electrical resistance and density and the emission of absorbed energy. It was therefore considered desirable to investigate the effect of atomic defect relaxation on transformations in cold-worked nickel alloys with a large difference between the atomic radii of the alloy components. In the present paper, an alloy was selected with 10 at.% Mo. The difference between the atomic radii in this alloy could affect its diffusion in

I 13047-65

ACCESSION NR: AT4046834

6

comparison with Ni-Cr¹ and Ni-Fe¹ alloys. Fig. 1 of the Enclosure shows that the cold-worked Ni-Mo alloy shows a marked increase in electrical resistance during tempering. Moreover, the sample length decreases. At temperatures above 200C, the activation energy in the cold-worked alloy increases, reaching a constant value of 66 ± 2 kcal./mole at 270-300C. Tests were also made involving measurement of the vacancy migration energy. It was found that for nickel, this energy is approximately equal to the vacancy formation energy. For a Ni-Cr alloy, the first (vacancy migration energy) is 39 ± 2 kcal./mole and the second is 40 ± 3 kcal./mole. For the Ni-Mo alloy, however, these energies differ sharply. "The authors wish to thank scientific worker V. V. Karavayeva and student N. Lobanova for help in performing the tests." Orig. art. has: 3 figures and 2 formulas.

ASSOCIATION: none

SUBMITTED: 16Jun64

ENCL: 01

SUB CODE: MM

NO REF SOV: 006

OTHER: 008

Card 2/3

KRASKINA, N.A.; FONTALIN, L.N.; SOLOV'YEV, V.V.; SAKOVA, O.V.

Division of a spleen cell suspension by centrifugation in the density gradient and characteristics of the immunological functions of the individual cell fractions. Biul. eksp. biol. i med. 60 no.7:78-83 J1 '65. (MIRA 18:8)

1. Otdel immunologii (zav.- prof. M.P. Pokrovskaya) Moskovskogo nauchno-issledovatel'skogo instituta epidemiologii i mikrobiologii i otdel obshchey immunologii i onkologii (zav.- prof. L.A. Zil'ber) Instituta epidemiologii i mikrobiologii im. N.F. Gamalei, Moskva.

SOKOLOVA, T.N.; SAKOVA, T.V.; KONSTANTINOV, N.N., doktor biol.
nauk, red.[deceased]

[Photoperiodism of plants; bibliography of the literature
for 1940-1963] Fotoperiodizm rastenii; bibliograficheskii
ukazatel' literatury 1940-1963 gg. Moskva, Nauka, 1965.
364 p. (MIRA 18:10)

1. Moscow. Glavnyy botanicheskiy sad. Nauchnaya biblioteka.

SAKOVETS, O. I.

Theory of Waves and Theory of Ships

Dissertation: "Effect of Rolling of a Ship on the Load of Trawl Warps." Cand Tech
Sci, Moscow Technical Inst of the Fish Industry and Economy, Moscow, 1953. (Referativnyy
Zhurnal -- Mekhanika Moscow, Mar 54)

SO: SUM 213, 20 Sep 1954

SAKOVETS, O.I. [Sakovets', O.I.]

In the Azov and Black Sea Scientific Research Institute of
Deep-Sea Fish Industry and Oceanography. Khar.prom. no.1:67-
68 Ja-Mr '62. (MIRA 15:8)
(Ukraine--Fisheries--Research)

SAKOVETS', O.Y.

Results of the research work of the Azov-Black Sea Scientific
Institute of Fisheries conducted during 1961. Khar.prom. no.3:
57-61 JI-S '62. (MIRA 15:8)
(Ukraine--Fisheries--Research)

SAKOVICH, A.

25779 Sakovich, A. Oratsional'noy Rasstenojke Peregruzochnykh Mashin Pri
Fogruzke I Razgruzke Sudov. Mor. Flot, 1948, No.7, S. 12-17.

SO: Letopis' Zhurnal Statey, No. 30, Moscow, 1948

SAKOVICH, A. A. Cand. of Tech. Sci.

"Investigation of Materials for Mercury-Arc Rectifiers", reported in the article First All-Union Scientific and Technical Session on Mercury-Arc Rectifiers," *Elektrichestvo*, No. 11, 1949.

Abstract W-9395, 10 Apr 1950.

SECRET, U.S.
YENIN, V.T., kand.tekhn.nauk; SAKOVICH, A.A., kand.tekhn.nauk;
FILIMONOV, A.N., inzh., (Leningrad).

Prospective use of d.c. electric power transmission in the Soviet
Union. Elektrichestvo no.11:88-92 N '57. (MIRA 10:10)

1.L'vovskiy politekhnicheskii institut (for Yenin). 2.Vsesoyuznyy
elektrotekhnicheskii institut im. Lenina (for Sakovich).
(Electric power distribution)

422

AUTHOR: Sakovich, A.A., Candidate of Technical Sciences (All-Union
Electro-technical Institute VET.)

TITLE: The investigation of materials for mercury-arc rectifiers.
(Issledovaniye materialov dlya rtutnykh vypriamiteley.)

PERIODICAL: "Vestnik Elektropromyshlennosti" (Journal of the Electrical
Industry.) 1957, Vol. 28, No. 5, pp. 39 - 46, (U.S.S.R.)

ABSTRACT: This article examines questions relating to materials used
for the electrodes (anodes and grids), for internal components
(fixing parts and screens) and for the vacuum-tight casing
i.e. to special steels and graphite. The main characteristics
of materials for the internal parts of a valve are the follow-
ing: stability to ionic bombardment; the magnitude of
electronic and ionic emission; gas evolution on heating in
vacuum; and diffusion of hydrogen.

The stability to bombardment by ions of mercury was investi-
gated in an instrument resembling a model of a mercury valve.
The specimen which is in the form of a rounded disc, is sub-
mitted to intense bombardment by mercury ions for which
purpose a high negative potential is applied to it. The
materials examined were several grades of graphite and of
steel, molybdenum, tungsten, nickel and titanium, and their
performance is reported in terms of frequency of backfire at
20 kV with a current of 0.5 mA; pulverisation with an ion
energy of 20 keV and gas evolution on heating in vacuum to a
temperature of up to 850 °C.

The investigation of materials for mercury-arc rectifiers. (Cont.)
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Emission was investigated on a cylindrical graphite specimen 3 mm in diameter and 25 mm long fixed in terminals. The specimen could be heated to a high temperature by passage of current. The receiving electrode was a molybdenum cylinder, the whole equipment was placed in a high vacuum. Investigations of graphite specimens of different compositions showed that there is a relationship between the emission and the frequency of backfires, grades of graphite containing admixtures of some fractions of a percent gave a great increase in frequency of backfire with increase in temperature. Tests were made on samples of graphite containing various contaminants. Oxides of some elements (e.g. SiO_2 and Al_2O_3) give much greater emission than the same elements in the pure form or their carbide. The alkali and alkali earth metals give particularly great emission.

Secondary emission of electrons under the influence of ionic bombardment was investigated in a special instrument. The investigations showed that the secondary emission current of an undegassed specimen is large at first, then rapidly falls and reaches a steady value after ten or fifteen minutes. The coefficient of secondary emission increases with increasing voltage reaching values greater than unity in the equipment used at voltages of 25 to 30 kV. The secondary emission coefficient increases with increase in the intensity of the electric field and the surface of the material investigated. The secondary emission coefficient of polished specimens is lower than that

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(Cont.)

of rough ones.

The evolution of gas from specimens on heating in a vacuum was investigated in a special equipment. The results for various kinds of steel are presented in the form of a graph. It may be concluded that when steel is degassed in vacuum and exposed to the atmosphere it does not quickly absorb gas. Gas evolution diminishes sharply with reduction in the temperature because of reduced diffusion of gas through the metal. In graphite gas evolution increases after an interruption in the heating. This is associated with absorption of gas by the surface layers of graphite on cooling.

In addition to measuring the quantity of gas evolved the composition was determined with a magnetic mass spectrometer. In investigating gas evolution from steel it was found that the most undesirable components are oxygen, carbon dioxide and heavy hydro-carbons. Water, carbon monoxide, methane and ammonia were less dangerous. Nitrogen is harmless in small concentrations, hydrogen is not dangerous even at high concentrations because it facilitates the removal of oxides and contaminants. However, a high concentration of hydrogen causes constriction of discharge and overheating of parts and also hinders ignition.

The diffusion of hydrogen was investigated. It is well-known that deterioration of vacuum takes place by diffusion of hydrogen from the cooling water through the metal walls.

The investigation of materials for mercury-arc rectifiers.⁴²²
(Cont.)

Diffusion was investigated on a hollow cylindrical steel specimen, 100 mm in diameter, 250 mm high with a wall thickness of 4 mm made of the material under investigation. The experiments showed that the quantity of hydrogen diffusing was considerably greater than that of gas leaking-in which was checked separately. The use of anti-corrosion solutions and thin electro-plating did not stop diffusion, special lacquers and enamels were not sufficiently reliable and in any case could not withstand the high temperatures used in degassing. Diffusion was not observed through stainless steel.

The selection of materials and the investigation of the technology of manufacture is next considered. Recommendations are made about specifications for graphite and steel. Information is given about the precautions that must be taken in making parts from graphite in order to avoid contamination and of investigations that have been made into the process of heating graphite in a vacuum. The appropriate treatment for steel is also described. Data is given about the reduction in the frequency of backfiring that results from heat treatment of the graphite. It is recommended that after the graphite has been heated the oven should be filled with a special unnamed gas which greatly speeds up the subsequent degassing of the graphite in vacuum. 8 figures, 4 literature references (Russian).

SAKOVICH, A.A.

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TITLE: An Investigation into the Possibility of Autonomous Supply
of the Auxiliary Power Requirements of High-voltage Mercury
Valves. (Issledovaniye vozmozhnostey avtonomnogo pitaniya
sobstvennykh nuzhd vysokovol'tnykh rtutnykh ventiley)

PERIODICAL: Vestnik Elektropromyshlennosti, 1957, Vol.28, No.9,
pp. 3 - 8 (USSR).

ABSTRACT: The rectifier/inverter sub-stations of high-voltage d.c.
transmission systems use bridge-connected rectifiers whose
cathodes may be at very high voltages to ground. The mercury
valves require some 1 - 3 kW of auxiliary power, at cathode
potential, for ignition excitation, anode heating, and electrode
control. It is very difficult to supply the power at the neces-
sary voltage, and special isolating transformers are used
which often require to be connected in cascade. It has recently
been proposed to tap the power from the damping circuit between
the valve anode and cathode. This circuit comprises a series
capacitance and resistance used as a potential divider and is
usually an essential part of the converter. Control signals are

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transmitted by a modulated light ray which acts on a photo-cell operating at valve potential. The method obviates an isolating transformer and is simpler and cheaper. The principles of tapping power from the damping circuit are then explained. Fig.1 shows the valve bridge of a rectifier/inverter sub-station for the d.c. Stalingrad-Donbas system. The rated voltage of the bridge is 100 kV and the transmitted current 900 A. The three-phase output of the transformer is at 83 kV. The principal operating conditions of a sub-station are considered and an expression is written for the voltage in each case. It is shown that the inverse-voltage contains only the fundamental frequency and multiples of three. The relationship between the harmonic content of the voltage and the fixing angle is shown in Fig.2 and it is concluded that a filter must be provided in order that power may be tapped from the damping circuit. The corresponding circuit is shown in Fig.3a. The only additional equipment required is a transformer with an insulation level of 10 kV. The procedure for calculating the maximum power from a tapping is described and the simplifying assumptions underlying the calculation are stated. A vector diagram for the equivalent card 2/4 circuit (Fig.3b) is used to construct graphs of the active

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(Fig.4) and reactive (Fig.5) power as functions of the circuit parameters. Fig.6 gives the reactive power and the loss in the choke coil as functions of the capacitance for various values of the capacitance in the damping circuit. Hence, the useful power from the tapping is determined and it is shown that some increase in the capacitance of the damping circuit extends the useful range of power tapped. The power calculations were verified experimentally on a model of the circuit. The damping and tapping circuits were connected in parallel with a thyatron model of a power system sub-station. Voltage oscillograms were taken with firing angle values and transmitted current corresponding to the main operating conditions. The results were worked out on a scale corresponding to the Stalingrad-Donbas scheme and showed that for firing angles close to 0 or 150 (which correspond to normal transmission conditions) the voltage waveform was satisfactory. For angles near 90° the voltage waveform was very distorted. This was because of insufficiently-close tuning of the tapping circuit and non-linearity of the inductance of the choke. If the choke is linear the voltage distortion is much less. For firing angles close to 0 and 150° the tapped voltages and power are in good agreement with the

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calculated values. The proposed circuit has a number of advantages compared with supplies from isolating transformers. It requires only a capacitor, a transformer and a choke, with an insulation level of 10 kV, which are much cheaper than an isolating transformer with an insulation level of 400 kV. A disadvantage of the system is the need to raise the capacitance of the damping circuit. The circuit can be used for all transmission system valves except shunting valves. It can also be used successfully for low-voltage mercury-arc rectifiers in industry and traction to deliver power at voltages of 0.8 - 15 kV. It is best suited to sealed-off valves and has limitations when applied to pumped valves.

There are 6 figures and 2 Slavic references.

ASSOCIATION: All-Union Electrotechnical Institute (VEI)

SUBMITTED: April 12, 1957.

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110-9-3/23

AUTHOR: Butayev, F.I., Klimov, N.S., Sakovich, A.A. and Stepanov, N.P.,
Candidates of Technical Sciences.

TITLE: High-voltage Rectifiers/Inverters for Direct Current Power
Transmission. (Vysokovol'tnyye preobrazovateli dlya pere-
dachi energii postoyannym tokom)

PERIODICAL: Vestnik Elektromyshlennosti, 1957, Vol. 28, No. 9,
pp. 8 - 14 (USSR)

ABSTRACT: Brief reviews of the main stages of development of high-
power, high-voltage mercury valves at the All-Union Thermo-
technical Institute. The first stage concerns the Kashira-
Moscow experimental transmission line. The second stage includes
high-voltage valves of intermediate power and the production of
single experimental installations. The third stage concerns
high-power, high-voltage valves suitable for practical high-
voltage d.c. transmission systems. High-voltage rectifiers
have been under development at the All-Union Thermo-technical
Institute since 1935. A number of the principles then evolved,
including single-anode construction, a sectionalised anode system,
and oil-cooling, are still used. German experience with d.c.
transmission was notable for the fruitful work, directed by
G. Dobke, on the development of mercury-arc rectifiers for 150 A
Card1/5 max. and 120 kV max. Joint work with the Scientific Research

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Institute for Direct Current (NIIPT) using the Kashira-Moscow experimental transmission line, showed that equipment for d.c. power transmission should be considered as a complex whole. In this experimental system, great difficulties were encountered as a result of instability of valve characteristics and a number of specific properties of high-power, high-voltage, rectifier circuits. The valves are subject to back-fire, break-down, loss of control action of the grids, loss of excitation, flashover of anode insulators, and over-voltages on the auxiliary electrodes. There were also difficulties arising from system disturbances such as over-voltages, high-frequency oscillations and current surges. For example on the Stalingrad-Donbas line, where the normal voltage on a valve should be 65 kV, calculations show that during over-voltages it may reach 250 kV. Considerable difficulties arose as a result of free oscillations which appeared in the circuit during ignition and extinction of a valve. High-frequency oscillations, which caused severe radio-interference and damage to the anodes were suppressed by special reactors. Low-frequency oscillations were more difficult to suppress, and damper circuits consisting of capacitance and resistance are being used for this purpose. At first, the Kashira-Moscow line operated with one bridge having three series valves in each arm

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and later with two bridge circuits connected in series, one having one valve per arm and the other two. In designing the Stalin-grad-Donbas line, it is proposed to use a sub-station circuit consisting of eight bridge circuits in series, each for a voltage of 100 kV and a current of 900 A. In all, there will be 192 valves working as converters and 32 "shunting" valves. At full load, each valve will handle a power of 7.5 MW. A serious problem was the control of individual circuits from the auxiliary supply panel which was solved under the guidance of Candidate of Technical Sciences I.L. Rubinshteyn. Control is effected by means of a light ray acting on photo-resistance cells which operate relays. For development work, the All-Union Electro-technical Institute (VEI) has constructed equipment for making static tests at up to 200 kV r.m.s., surge generators and a high-power equivalent for testing valves under rated conditions. A large test installation with a transformer group of 120 MW has been constructed at one sub-station. Questions of valve design are then discussed. A sectional drawing of a high-voltage valve is shown in Fig.1. The distinctive feature of high-voltage valves is the anode system and different methods of sectionalising the anodes are shown in Fig.2. It is usually advisable to extend anode sectionalisation to the discharge space, and different types of screens are shown

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in Fig.3. Other anode constructions are shown in Fig.4; Fig.4zh shows an anode design developed by V.D. Andreyev. Several types of valves developed in the All-Union Electro-technical Institute are illustrated in Fig.5 (photos). The main relationships of voltage division between the intermediate electrodes of the anode assembly were established during the investigations of high-voltage valves. When the valve works as a rectifier, the negative voltage drop occurs mainly in the gap between the anode and the first anode insert. When working as an inverter the positive blocking voltage lies very largely in the space between the insert furthest from the anode and the upper grid. Development of rectifiers proceeded alongside theoretical and physical investigations, of valve strength, current distribution in the anode, and voltage distribution in the anode assembly, ignition effects, effects during failure of operation and during heavy overloads. In the investigation of physical effects, probe methods of vapour density measurement were very useful. Graphs of the probability of back-fire for the valves BP-1 and BP-3 as functions of cooling temperature are shown in Fig.6. Laboratory results have been confirmed by data of 12 000 hours tests on valve type BP-3 in the experimental transmission line.

Card4/5 Valves type BP-4/2 and BP-9/3 are intended for the Stalingrad-

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Donbas transmission line and have passed a wide variety of laboratory tests and the results of the first high-power tests confirm the satisfactory operation of the valves in approximately their normal working conditions. In the light of the experience gained, development is likely to comprise: valves of greater power for higher voltages and currents, which will be combined with improvement in manufacture to improve reliability; valve designs which will ensure great vacuum-tightness, enabling the manufacture of pumpless valves or, if necessary, to provide internal devices to maintain and restore vacuum. Two new types of pumpless valve are shown in Fig.7, one for 150 A max. and the other for 900 A max. with reverse voltages of the order of 100 - 120 kV max. There are 7 figures and 5 Slavic references.

ASSOCIATION: All-Union Electrotechnical Institute (VEI)

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